

UNITED NATIONS DEVELOPMENT PROGRAM

CAPACITY BUILDING FOR THE RAPID COMMERCIALIZATION OF RENEWABLE ENERGY

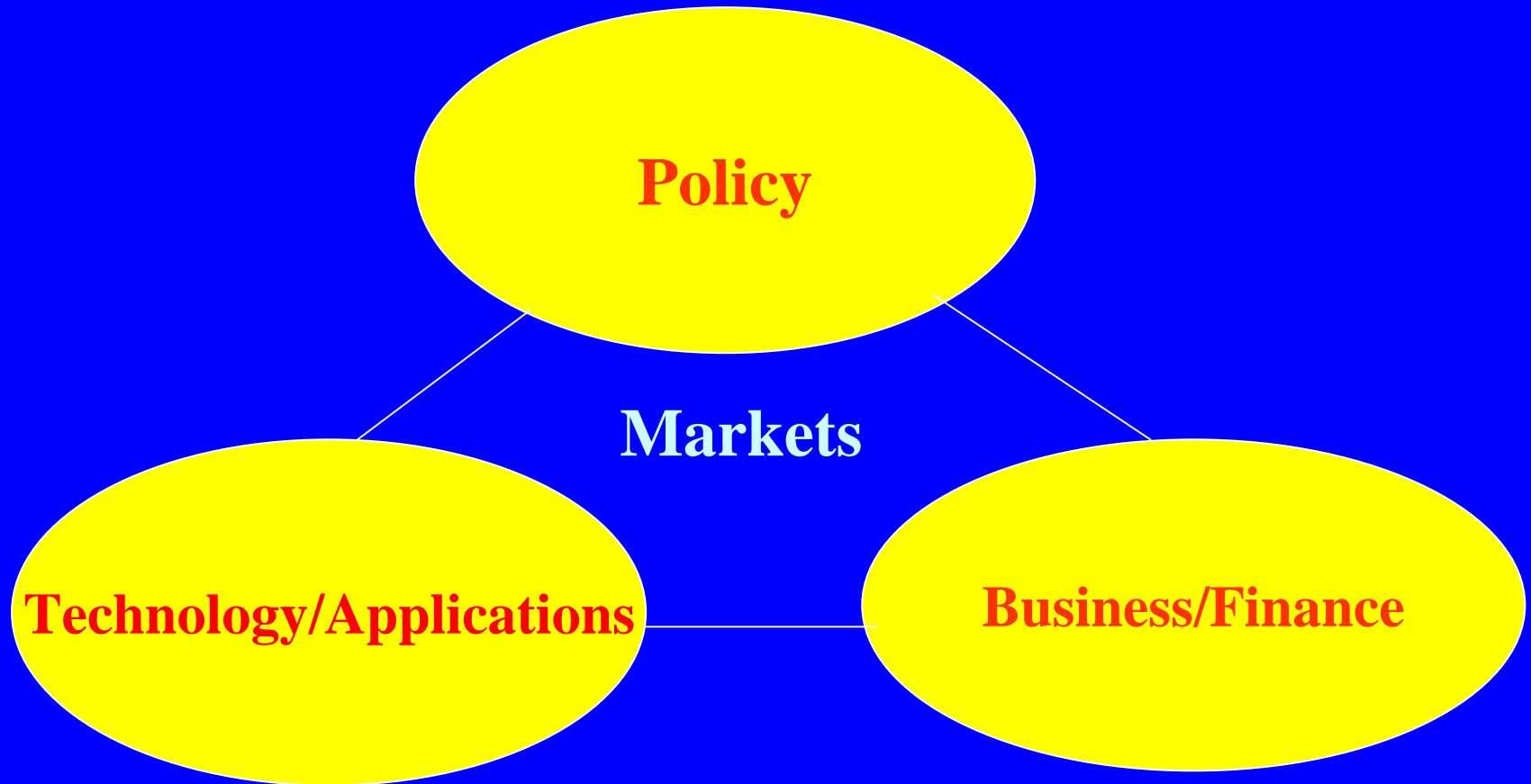
**CO-FINANCED BY
GOVERNMENT OF CHINA
GLOBAL ENVIRONMENTAL FACILITY
GOVERNMENT OF AUSTRALIA
GOVERNMENT OF THE NETHERLANDS**

**IMPLEMENTED BY STATE ECONOMIC AND TRADE COMMISSION
EXECUTED BY UNITED NATIONS DEPARTMENT OF ECONOMIC AND
SOCIAL AFFAIRS**

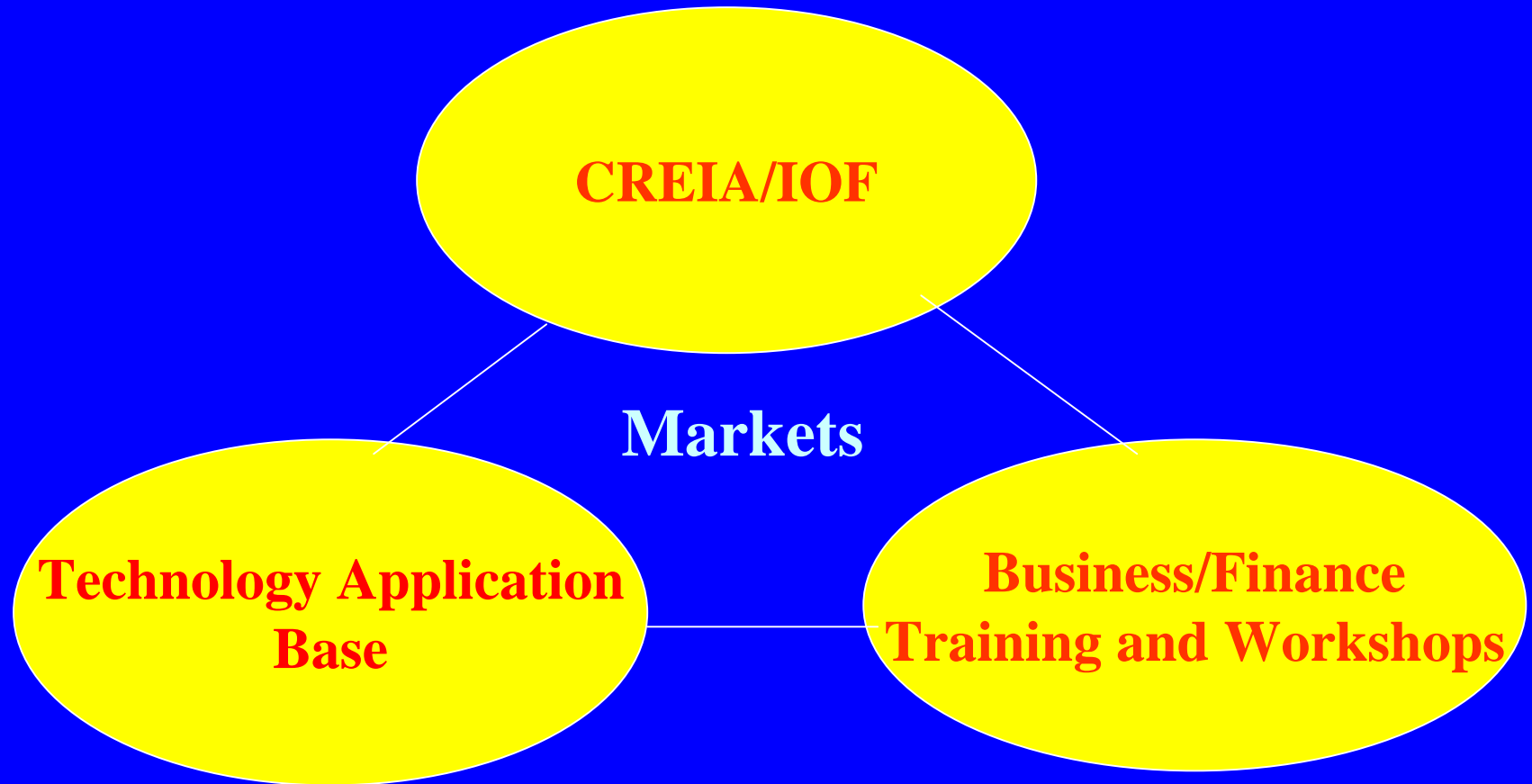
**Commercialization Strategy And Work Plan for Next Twelve
Months**

AG Meeting, Beijing, November 19, 1999

Renewable Energy Commercialization



Commercialization Strategy



Chinese Renewable Energy Industries Association

- **Interface of Project activities with Chinese renewable energy industries, gov't, and other stakeholders**
- **Investment Opportunity Facility to link projects with investors**
- **Act on industries' behalf to advance renewable energy commercialization**
- **Facilitate implementation of commercialization strategy of the Project**
- **Facilitate workshop and training activities**

Workshops and Training

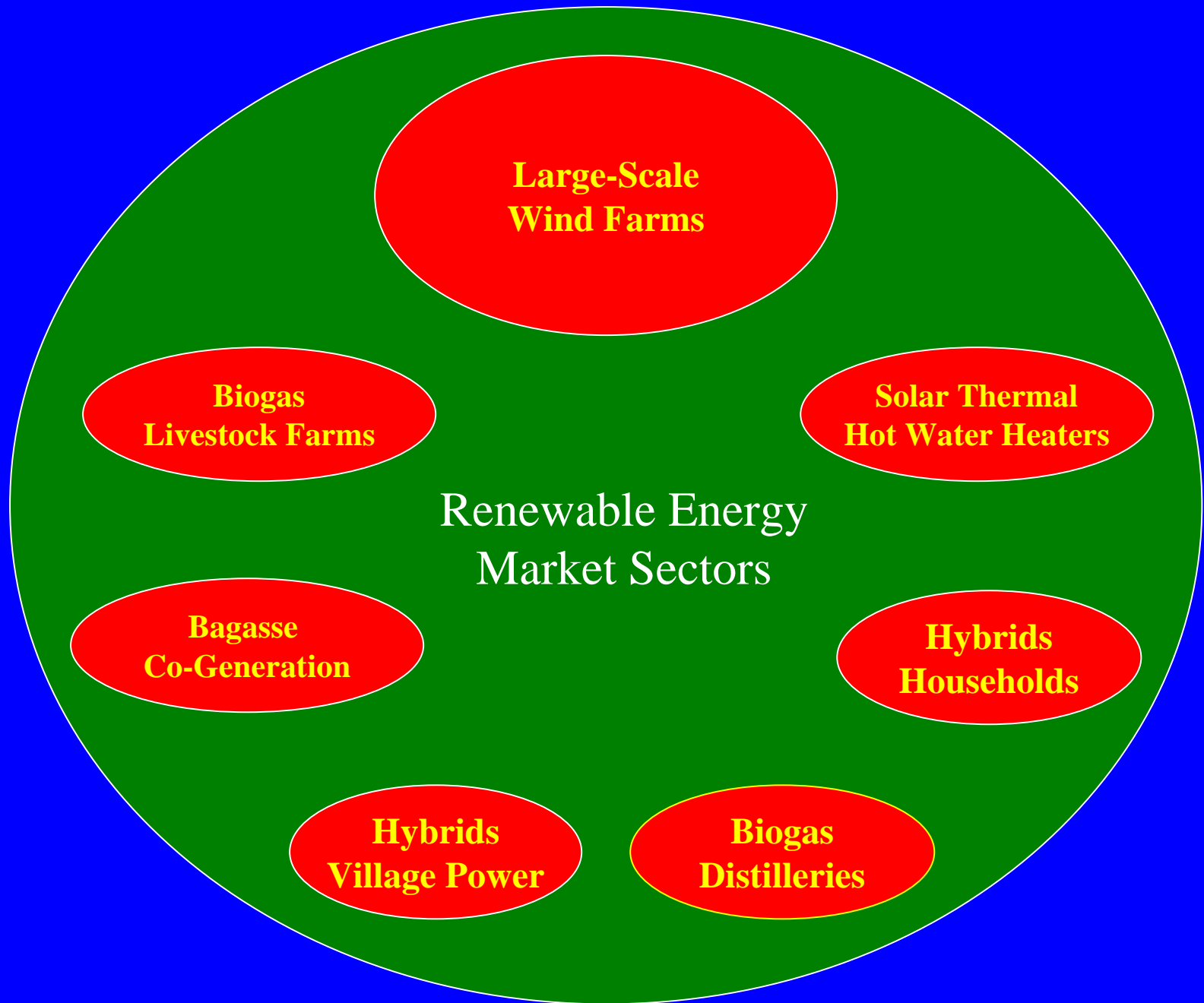
- **Investment Opportunity Fora in selected sectors**
- **Workshops/training targeted at specific renewable market sectors for business/finance issues**
- **Generic activities with broad participation for business and finance training**
 - Project development, feasibility studies, project evaluation
 - Business training (IPP's, ESCO's), financing mechanisms, etc.
 - Entrepreneurial training, etc.
- **Technical assistance workshops and training**
 - Standards and certification
 - Resource assessment, etc.

Technology/Application Projects

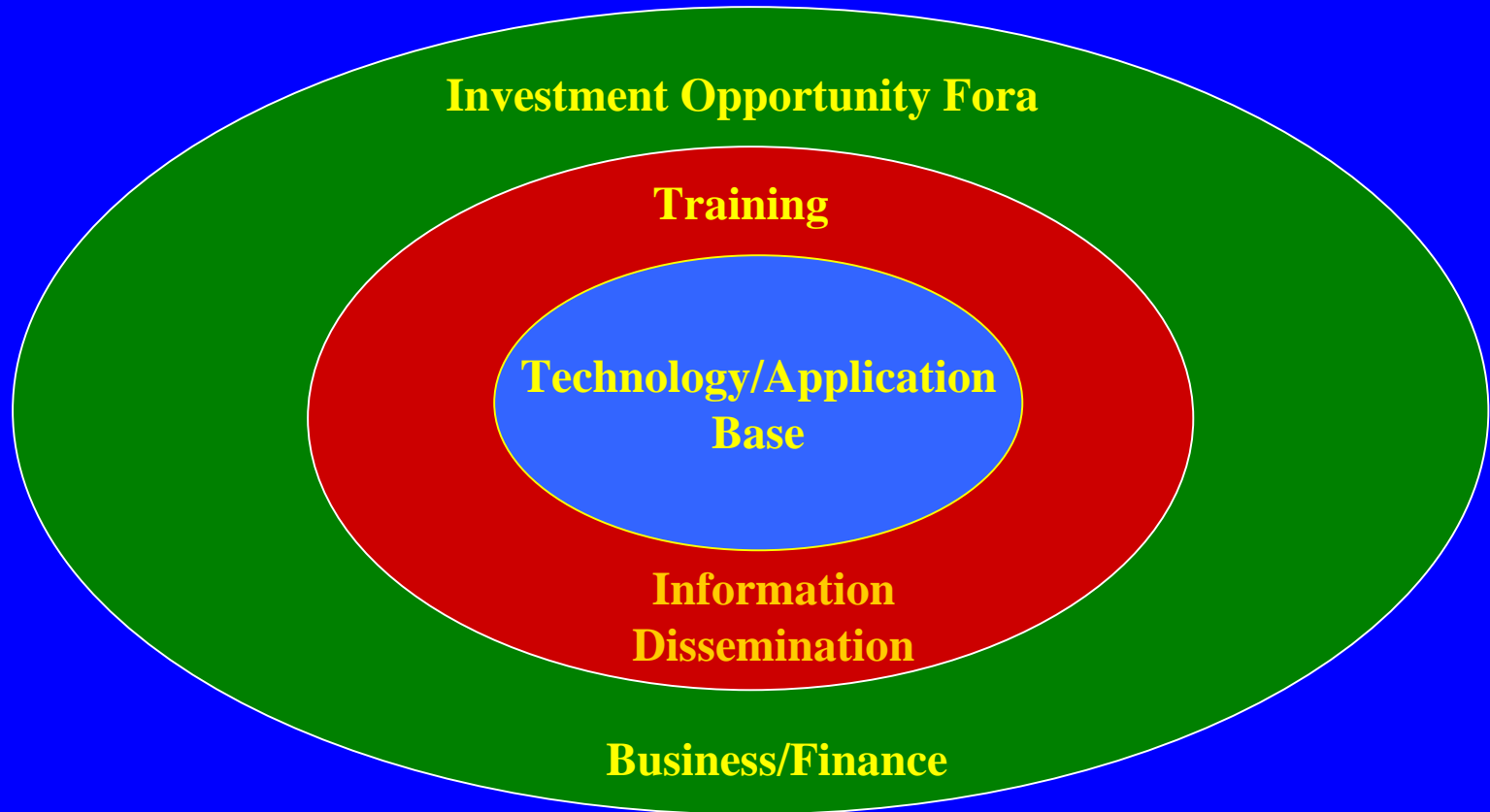
- **Promote transfer of advanced commercial technology**
- **Address infrastructure issues for sustainability**
- **Replication of “generic and flexible” system designs**
- **Dissemination of international best practices**
- **Design and financing guide books**

Technical Assistance

- **Standards and certification**
 - Consensus building standards development
 - Certification project for solar hot water systems
- **Resource assessment and GIS capacity building**
 - National resource database inventory
 - GIS based information products
- **Technical assistance for wind farms**
 - Site specific resource assessment
 - Wind farm grid connection issues
 - International utility intern program



Market Sector Approach



Market Sector Approach

Biogas Livestock Farms

TECH/APPL BASE

advanced technology

best practices

design guidelines

finance guidebook

INFORMATION OUTREACH

local and national regulators

farm owners and project developers

investors and sources of financing

focused business, finance, and
market training

project development training

INVESTMENT OPPORTUNITY FORA

link project developers with
investors and financial institutions

project development assistance

Biogas Industrial Distilleries

TECH/APPL BASE

advanced technology

best practices

design guidelines

finance guidebook

INFORMATION OUTREACH

local and national regulators

distillery and similar industry
owners and project developers

investors and sources of financing

focused business, finance, and
market training

project development training

INVESTMENT OPPORTUNITY FORA

link project developers with
investors and financial institutions

project development assistance

Bagasse Co- Generation

TECH/APPL BASE

advanced technology and increased
scale

best practices

design guidelines

finance guidebook

INFORMATION OUTREACH

large sugar industry processors

local utilities

investors and sources of financing

focused business, finance, and
market training

comprehensive project development
training from feasibility study on

INVESTMENT OPPORTUNITY FORA

link project developers with
investors and financial institutions

Market Sector Approach

Large-Scale Wind Farms

TECHNICAL ASSISTANCE

best practices utility interconnection
international utility internship program
resource assessment, regional and site specific wind mapping and data collection

PROJECT DEVELOPMENT

business training (IPP, business mgmt.)
utility wind subsidiaries, private developers, IPPs
investors and sources of financing
comprehensive project development training

INVESTMENT OPPORTUNITY FORA

link project developers with investors and financial institutions
project development assistance

Hybrids for Village Power and Houses

TECH/APPL BASE

advanced technology
best practices, design guidelines
finance guidebook

INFORMATION OUTREACH

distributors and system integrators
local and national government, poverty alleviation, policy level
investors and sources of financing
small business, entrepreneurial, and marketing training
project development training
microcredit and microenterprise training/development

INVESTMENT OPPORTUNITY FORA

link project developers with investors and financial institutions
project development assistance

Solar Thermal Hot Water Heaters

TECHNICAL ASSISTANCE

advanced technology and increased scale
best practices
certification for manufacturing and systems
testing equipment and facilities

INFORMATION OUTREACH

solar thermal industry, end users, government regulators
focused business, finance, and market training
project development training

INVESTMENT OPPORTUNITY FORA

link project developers with investors and financial institutions
project development assistance

Activity/Stakeholder Matrix

	End Users and Customers	Manufacturers, Suppliers, and Installers	Project Developers	Banks and Financial Institutions	Investors	Government
Technology and Application Base	XXX	XXX	XXX			XXX
Project Development	X	XX	XXX			XXX
Project Assessment and Analysis	X		XX	XXX	XXX	XX
Business Training	XX	XXX	XXX			XX
Finance Mechanisms	XX	XX	XXX	XXX	XXX	XX
Standards and Certification		XXX	XX			XXX
Resource Assessment	X	XX	XXX			XXX

Major Activities for Next Six Months

- **Complete establishment of CREIA**
- **Start GIS/Resource Assessment Activities**
- **Technology/Application Projects**
 - Complete two biogas facilities
 - Complete design of third biogas plant
 - Finish design and start construction of two hybrid sites
- **Study tour Australia and Japan**
- **Strategic Planning: Business/Finance Workshop**

New Tasks to End of 2000

- **Define content, establish schedule, and start workshop/training program**
 - **Initiate business development workshops/training**
 - **Initiate finance development workshops/training**
- **Technology/application projects**
 - **Initiate bagasse co-generation project(s)**
 - **Complete third hybrid project**
- **Strategic Planning**
 - **Workshop for standards and certification**
 - **Workshop for wind farm capacity building**
- **Project Audit**

New Tasks to End of 2000 (Continued)

- **Renewable energy standards task**
- **Certification for solar thermal hot water systems task**
- **Capacity building for wind farm development**
- **Renewable energy credit mechanisms**

Outcomes and Impacts

- **Chinese Renewable Energy Industries Association**
 - Fully functioning organization
 - Mobilization of domestic industry
 - Delivery of products and services that impact industry
 - Effective interface with government/investment et al sectors
 - IOF operational and beginning to identify investment opportunities
- **Workshop and Training Program**
 - First series of activities conducted
 - Capacity building impacts for business and finance through training and information exchange
 - Increased awareness of new business and finance mechanisms
 - Effective support of new project development activity

Outcomes and Impacts (Continued)

- **Technology/Application Projects**
 - Introduction of advanced technology and system designs
 - Better approaches to handling infrastructure issues impacting sustainability
 - Increased awareness of renewable options and opportunities
- **Technical Assistance**
 - Standards/certification activities will be initiated
 - Improved technical capacity for resource assessment
 - Technical assistance for wind farms initiated